

WATER STRIDERS NEW TO THE FAUNA OF OHIO, INCLUDING THE DESCRIPTION OF A NEW SPECIES.*

CARL J. DRAKE.

During the summer of 1916 the writer paid considerable attention to the aquatic and semiaquatic Heteroptera of Ohio, especially in the vicinity of Columbus. The most fertile collecting grounds were the numerous ponds in the bed of the old abandoned canal (near Ira, Hebron, Prentiss, and Rockbridge), the lakes near Akron, Buckeye Lake and Mirror Lake on the campus of Ohio State University. The Olentangy River also furnished a number of favorite and secluded haunts for many species.

All of the water-striders known to occur in the state, save three or four species, were collected on Mirror Lake, also on a rather large stagnant pond in the bed of the old canal at Rockbridge. Some rather interesting records were noted relative to their breeding habits, migration and pterygopolymorphism. *Trepobates pictus* H. S. was by far the most prolific species on Mirror Lake and only occurred in the apterous form. It is probably our most variable water-strider in color-forms. The insect breeds in stagnant ponds, lakes and parts of slow-moving streams. On the Rocky River, near Cleveland, the writer took many nymphs and adults, including a single example of an alate form. The latter had broken off its wings at the usual place in order to permit coition. *Gerris canaliculatus* Say spends the winter in the mature form. Nymphs and adults, both apterous and alated forms, were observed by the hundreds on the old canal at Rockbridge during July, August and September. Many records were recorded for the capture of one or two macropterous forms on the Olentangy River, Mirror Lake and numerous small ponds at various times during the summer. In a number of instances it seems that the insect must have migrated to Mirror Lake or to the small ponds and pools during night, or early morning or evening, as no specimens were present on these waters during the previous days. Similar observations were observed for *Merragata brunnea*

* Contribution from the Department of Entomology, New York State College of Forestry, Syracuse, N. Y.

Drake,† *Gerris rufoscutellatus* Latr. and *G. conformis* Uhl. The size of the wing-pads in the short winged form of *M. brunnea* are very valuable. About the middle of July *Gerris remigis* Say became rather scarce upon Mirror Lake, but two or three days later many long winged forms had immigrated to the lake. These alate forms began to slowly disappear and in less than two weeks they had all migrated to new waters. A number of other records were recorded for the migration of *G. rufoscutellatus*, *G. conformis* Say, *G. remigis*, *G. marginatus* Say, *G. buenoi* Kirk., *Microvelia hinei* (n. sp.), *M. borealis* Bueno to Mirror Lake and other ponds in the vicinity of Columbus. *Gerris canaliculatus*, *G. conformis* and *M. hinei* n. sp. seems to have only visited Mirror Lake occasionally and did not breed there during the summer. One specimen of *G. marginatus* was captured "in flight" along the south bank of the lake during the fore part of June. The writer also observed the notonectid *Notonecta undulata* Say, leave the water and migrate by flight from Mirror Lake. It was during the middle of May and the insect was captured by Mr. De Long and the writer as it was flying away from the lake.

A more detailed report upon the aquatic and semiaquatic Heteroptera will appear in a subsequent paper. A complete bibliography relating to the Hemiptera of Ohio has been published by Osborn and Drake in "ADDITIONS AND NOTES ON THE HEMIPTERA-HETEROPTERA OF OHIO," OHIO JOURNAL OF SCIENCE, Vol. XV, pp. 501-508.

***Velia stagnalis* Burmeister.**

Six specimens, all apterous; Sandusky Bay, Lake Erie (legit V. R. Haber); Rockbridge (legit A. J. Bassinger). This Species has been reported from Ohio, Pennsylvania, District of Columbia, North Carolina and the West Indies. It breeds in stagnant water.

***Microvelia fontinalis* Bueno.**

Two examples, collected on Lake Abram, near Berea, by the writer. The macropterous form is unknown. The Vellinæ‡ of the Atlantic States have been carefully studied.

† Drake, Carl J., Florida Buggist, Vol. III, No. 1, p. 2, 1919.

‡ Bueno, J. R. de la Torre, Bul. Brookl. Ent. Soc., Vol. XI, pp. 52-61, 1916.

Microvelia borealis Bueno.

This species is found throughout the state, both apterous and macropterous individuals being quite common. Specimens are at hand from Cleveland, Berea, Wooster, Tiffin, Buckeye Lake, Prentiss, Hebron, Columbus (Mirror Lake and numerous small ponds in the vicinity of Columbus), Sugar Grove, and Rockbridge. It is usually a little larger than *M. buenoi*§ or *M. hinei* (new species described below) and the hind tibiae are distinctly curved in the male.

Microvelia hinei new species.

WINGED FORM. General color velvety black or dark brownish black, the hemelytra with white area in the cells. Head a little longer than wide, with an impressed median, longitudinal line and with two more or less distinct broad, reddish brown marks (one on each side of impressed median line) on the basal portion; eyes prominent, the distance between them greater than their diameters; head with silvery gray pile next to the eyes. Antennae slender, rather short, not reaching to the posterior margin of pronotum; first segment strongest, curved, subequal in length to the third; second segment shortest; third segment slenderest; fourth segment longest, about two and a half times the length of the first, at its widest part about equal to the second in thickness, fusiform. Antennae and legs dark brown, the coxae, trochanters, basal portion of femora and usually a rather large area on first antennal segment flavous. Elytra brownish black, the cells with white areas, the outer margins hairy. Pronotum a little wider than long, with a broad, transverse, finger-like flavous line near the anterior margin, with two transverse rows of foveae (one on each side of flavous line), usually with a broad, dark, median streak; humeral angles tumid, rather prominent, the lateral margin reddish brown. Abdomen beneath blueish gray. Femora practically straight in both sexes.

Male a little shorter and more slender than female. Genital segments not prominent, usually retracted within the abdomen; first genital segment very broadly, deeply and roundly notched beneath, the posterior margin above nearly straight. Length, (male) 1.6 mm., (female), 1.65 mm.; width, (male), .6 mm., (female), .65 mm.

APTEROUS FORM: Smaller than the winged form and usually considerably lighter in color. Thorax with two segments visible above, the prothorax longest and the posterior margin concave. Connexivum rather broad, light yellowish brown, the outer margin and narrow border between segments dark brown. Body beneath flavous or brownish, the pile silvery gray. Thorax dark brown, usually conspicuously marked with flavous or reddish brown, a broad transverse line near the anterior margin of the prothorax and a broken median line (usually to the second abdominal segment) flavous. The last two

§ Drake, Carl J., Bul. Brookl. Ent. Soc., Vol. XV, pp. 19-21, 1920.

abdominal segments a narrow median line and a spot on each side of the first two segments, more or less grayish. The color markings are somewhat variable in different specimens. Length, 1.4 mm.; width, about .51 mm. The male is slightly smaller than the female.

The species is named in honor of Prof. J. S. Hine. *Type*, winged male from Mirror Lake, Columbus, in my collection. *Morphotypes*, apterous male and female, from a small pond in the old canal near Ira, Ohio. Numerous specimens, from Ira (Summit Co.), Buckeye Lake, Hebron, Delaware, Columbus (Mirror Lake and several small ponds near the University campus), Prentiss and Rockbridge, during the summer of 1916. The specimens from Ira were collected by Prof. Hine and the writer on a small pond in the old canal. The species was taken in company with *M. borealis* Bueno, *M. americana* Uhler, *Merragata foveata* Drake, and *M. brunnea* Drake. It lives and breeds near the shore of stagnant ponds and small lakes. *Paratypes* in the collections of Ohio State University, New York State College of Forestry and the writer.

***Merragata brunnea* Drake.**

The types of this species and *M. foveata* are from Ohio. The species ranges from Nebraska east to New York City and south to Florida. The writer collected immense numbers of nymphs and adults at Gainesville, Florida, during the summer of 1918. All records indicate that the insect lives and breeds in ponds, swamps and near the shore of small lakes. Both brachypterous and macropterous forms are quite common.

***Merragata foveata* Drake.**

This insect ranges from Colorado to Illinois and Ohio, and east to New York and south to Florida. The writer took an alate example in an old swamp near Gainesville, Florida.

***Gerris argenticollis* Parshley.**

Two males were collected at Sandusky by the writer. I have another example from Mississippi. It was described from the New England States.

New York State College of Forestry, Syracuse, New York.